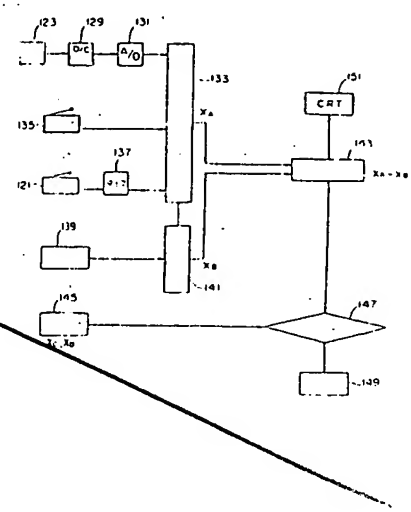
(54) DEVICE FOR CORRECTING RAM POSITION ON HYDRAULIC PRESS BRAKE
(11) 4-59128 (A) (43) 26.2.1992 (19) JP
(21) Appl. No. 2-168523 (22) 28.6.1990
(71) AMADA CO LTD (72) ICHIRO MURASE
(51) Int. Cl⁵. B21D5/02,B30B15/16

PURPOSE: To make the position of lower limit constant and to improve the accuracy of bending angle of the work by measuring the position of lower limit of the ram, comparing its amount of the change with the lapse of time with the allowable value preliminarily set with computing and correcting the data.

CONSTITUTION: The correction of the quantity of change with the lapse of time of the position of lower limit is stored to the memory 133 by lowering the ram for bending, making the ram lower limit switch ON, and digital-converting with the A/D converter of the lower limit position sensor 123 after T_1 seconds set at the timer 137. The initial value setting of (XA) ram lower limit position is stored to the sub-memory 141 at the 1st working time by pushing the key of the lower position setting means 139. (XB) On each stroke after setting the initial value, its quantity of changing (XA−XB) is processed with the processing means 143. And the allowable displacement quantity are made preliminarily XC, XD, and set to the displacement quantity setting means 145, the next equations are set with the comparing means 147, and command of elevation or lowering is outputted. XA−XB≧XD is the command to elevate. XA−XB≦XD is the command to lower.



129: D/C amplifier. 135: upper limit switch. 149: controller

(54) METHOD AND DEVICE FOR MARKING OPERATION PROGRAM FOR PRESS-BRAKE-ROBOT
(11) 4-59129 (A) (43) 26.2.1992 (19) JP
(21) Appl. No. 2-171683 (22) 29.6.1990
(71) DAIKIN IND LTD (72) YOSHIYUKI IMANISHI
(51) Int. Cl⁵. B21D5/02,B21D43/18,B30B15/26

PURPOSE: To provide the new method and device for making the operation program for the pressbrake-robot which can largely reduce the edit-working for changing the clamp-position by automatically making the clamp-program for setting the clamp-position of the flat sheet material.

CONSTITUTION: The clamping program for setting the clamping position of the flat sheet material is automatically generated in order to make the clamping position suitable for each motion on the case of automatically generating the program as follow corresponding for requiring respectively, i.e., the programs of the program for taking the flat sheet material in, the program for changing the clamping of the flat sheet material, the program for bending the flat sheet material, only the program for bending, or the reciprocating program to reciprocate the program for changing to clamp and the program for bending and the carrying-out program to carry the flat sheet material finished with the required bending motion from the press-brake to out, based on the data of the preset system data of the press brake system, the work-data for setting each kind of the flat sheet material, the directional data to show the direction for bending the flat sheet material, the angle data to show the angle for bending the flat sheet material, the number data to show the number for bending the flat sheet material and the side data to show the side of the flat sheet material to be bent.

(54) METHOD FOR FORMING ELECTRIC RESISTANCE WELDED STEEL TUBE
(11) 4-59130 (A) (43) 26.2.1992 (19) JP
(21) Appl. No. 2-169500 (22) 27.6.1990
(71) KAWASAKI STEEL CORP (72) YASUO NISHIDA
(51) Int. Cl⁵. B21D5/12,B21C37/08

PURPOSE: To reduce the residual stress in longitudinal direction at both edge parts and to manufacture the electric resistance welded steel tube with the good shape by making the draft against the inner side larger than the both edge parts of the blank tube.

CONSTITUTION: When the forming to make the curvature large is executed on the break down forming process of the 2nd pass, the draft of the part of length (l) inner side from both edge parts is made large. That is, the above forming is executed by utilizing the upper roll 10A and the lower roll 12A designed so that the clearance δ_1 of both upper and lower rolls at the position in contact with both edge parts ($(l_0-l)\div 2$) of the blank tube is made larger than the clearance δ_2 of the position in contact with the inner side part. Here, the circumference directional length (l) of the inner side part is 50-90% of the circumferential length l_0 of the blank tube. The difference of the draft between the both edge parts and the inner side part can be not decided at the same rule because it is influenced with every kinds of factors of the material characteristic of the blank tube, the thickness, the width, the forming condition, etc. The difference of the draft of most preferable in the range without generating the shape defect and not influencing for the accuracy of the dimension of tube is adopted.